

86S1-PAIN

FUNDAMENTALS OF INSTRUMENTAL ANALYSIS

ECTS: 9.0

HOURS PER SEMESTER/WEEK: LECTURES: 30/2; CLASSES: 105/7

FIELD OF THE STUDY: Chemistry

Level of study: First-cycle (Bachelor's degree) program

Course status: obligatory *

Year of the study: II

COURSE CONTENTS

LECTURES: Direct and indirect methods, electrochemical analytical techniques - potentiometry, amperometry, polarography, voltammetry, coulometry, electrolysis, spectroscopic techniques, fluorimetry, polarimetry, refractometry.

CLASSES: Direct potentiometry, potentiometric titration, conductometric titration, electrolysis, amperometric and biamperometric titration, voltammetric determination of heavy metal ions, coulometric titration, spectrophotometric methods, nephelometry, polarimetry, refractometry.

EDUCATIONAL PURPOSE: Acquainting with the basic techniques and methods of instrumental analysis.

LEARNING OUTCOMES

Knowledge. Knowledge of basic methods and techniques of instrumental analysis.

Skills. Ability to prepare samples, carry out determinations using analytical equipment and calculate the content of the component of the sample to be determined.

Social competences. Understands the need to improve their professional skills.

TEACHING FORMS AND METHODS

Lectures. Information lecture, lecture with multimedia presentation.

Classes. Laboratory classes - performing laboratory tasks in small teams of 2.

FORM AND CONDITIONS FOR VERIFICATION OF LEARNING OUTCOMES

Lectures. Written test - credit with a grade.

Classes. Written test - credit with grade.

BASIC LITERATURE

1) Szczepaniak W. 1996. Metody instrumentalne w analizie chemicznej, Wydawnictwo Naukowe PWN

ADDITIONAL LITERATURE

1) Ryszard Kocjan R. (red.) 2015. Chemia analityczna, analiza instrumentalna t.2, Wydawnictwo Lekarskie PZWL. 2) Cygański A. 2017. Metody spektroskopowe w analizie chemicznej, Wydawnictwo Naukowo Techniczne

THE TEACHER/TEACHERS CONDUCTING THE CLASSES:

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